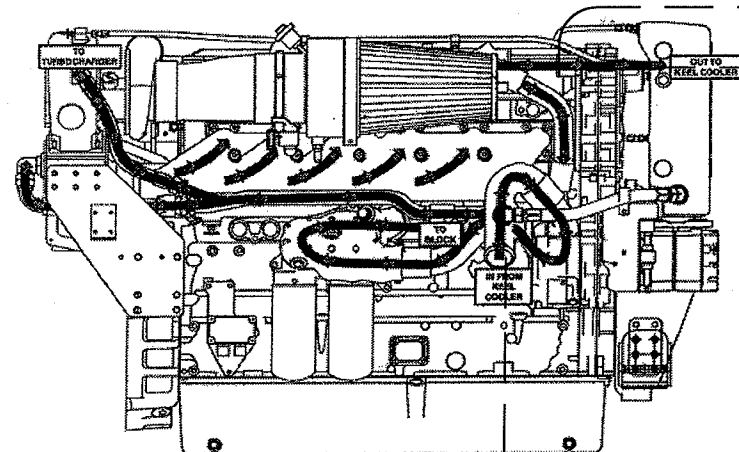


# JACKET WATER COOLING CIRCUIT RIGHT HAND ENGINE VIEW



REFERENCE DRAWING 8-6176206-G1 SHEET 3 OF 4

JACKET WATER  
HOT SIDE

SHIPYARD SUPPLY

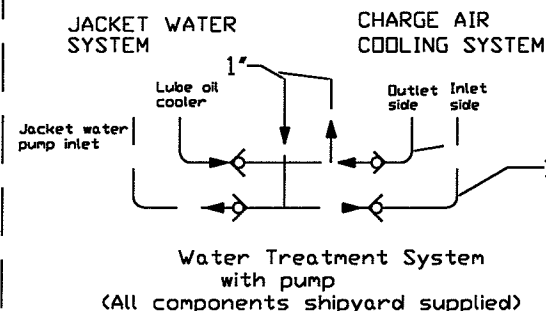
## SHIPYARD INSTALLATION DATA

### JACKET WATER COOLING SYSTEM

COOLANT CAPACITY (ENGINE ONLY): 6 GAL (JACKET WATER CIRCUIT ONLY)  
COOLANT CAPACITY (RADIATOR, CORE AND TANK): 37.7 GAL  
FLOW RATE: 125 GPM  
MIN FLOW RATE: 112 GPM  
MAX EXTERNAL RESISTANCE IN ENGINE CIRCUIT: 5.9 PSI  
FLOW RESISTANCE IN CORE AT MINIMUM FLOW RATE 1.20 PSI  
BALANCE OF SYSTEM MUST BE DESIGNED MAX RESISTANCE OF 4.7 PSI  
MIN ENGINE COOLANT FILL RATE: 3 GPM  
ENGINE INLET SIZE: 3.06" (SHIPYARD TO SUPPLY FLEXIBLE CONNECTION)  
ENGINE OUTLET SIZE: 2.56" (SHIPYARD TO SUPPLY FLEXIBLE CONNECTION)  
RADIATOR AIR FLOW RATE: 20,878 ACFM  
RADIATOR INLET CONNECTION: 4" 150# ASA FLANGE  
RADIATOR OUTLET CONNECTION: 4" 150# ASA FLANGE  
VENT LINE 1/4" DIAMETER AND MUST BE SLOPED UPWARD FROM ENGINE TO EXPANSION TANK WITH NO DIPS OR LOOPS TO ENTRAP AIR  
HEAT REJECTION TO COOLANT: 12,300 BTU/MIN  
MAX COOLANT OUTLET TEMPERATURE: 198 F  
MAX ENGINE WATER PUMP (EXCLUSIVE OF PRESSURE CAP): 21.3PSI  
MIN ENGINE COOLANT FILL RATE: 3 GPM  
MIN CAP PRESSURE: 7 PSI  
MAX SYSTEM PRESSURE (EXCLUSIVE OF CAP): 27.6 PSI  
MIN TOP TANK TEMPERATURE: 180 F  
VENT LINE 1/4" DIAMETER HOSE OR TUBE

# DUAL CIRCUIT COOLING SYSTEM DRAWING IS FOR ONE ENGINE

SHIPYARD SUPPLY  
1/4" DIAMETER VENT LINES



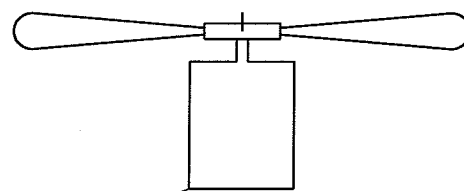
SHIPYARD  
SUPPLY

NOTE 8  
GENERAL  
NOTES

EXPANSION TANK  
MOUNTED ON RADIATOR  
SUPPLIED BY PPPC

NOTE 8  
GENERAL  
NOTES

YOUNG TOUCHTONE MODEL HM19F  
SIGHT GLASS  
SUPPLIED BY PPPC



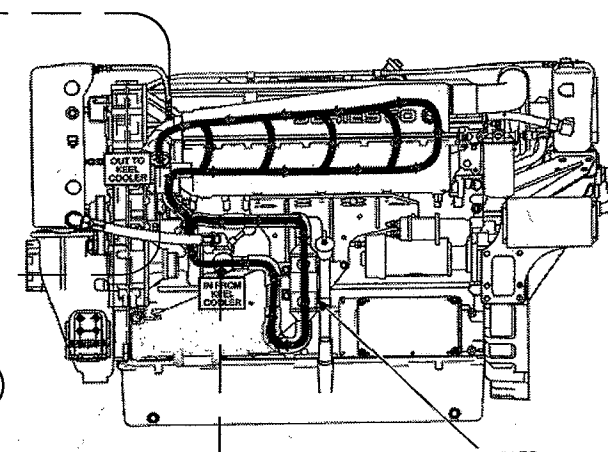
10 HP, 3 PHASE, 1165 RPM, 208/230/460  
VOLT MOTOR, NAMEPLATE 258/129 AMPS,  
FRAME 265T, TEFC MODEL 5KE256BC305C  
FOR MECHANICAL DATA, REF DWG #  
05-6176206-T4 AND ELECTRICAL DATA,  
REF 8-6176206-E5

## SHIPYARD INSTALLATION DATA

### GENERAL NOTES

1. P = PRESSURE MEASUREMENT POINT (NEAR ENGINE)
2. T = TEMPERATURE MEASUREMENT POINT (NEAR ENGINE)
3. CONNECTION HOSE SHOULD BE ADEQUATE LENGTH TO ALLOW THE USE OF DOUBLE CLAMPS 180 DEGREES APART WITHOUT CONTACTING THE BEAD OR EACH OTHER
4. CONNECTION MUST BE FLEXIBLE ENOUGH TO ACCOMMODATE RELATIVE MOTION BETWEEN CONNECTION COMPONENTS
5. HOSES MUST BE FUEL, OIL AND COOLANT RESISTANT
6. ALL FLUID COMPONENTS IN THE COOLING SYSTEM THAT HAVE THE ABILITY TO TRAP AIR MUST BE VENTED TO THE EXPANSION TANK
7. ALL COMPONENTS IN THE COOLING SYSTEM MUST BE MOUNTED BELOW THE EXPANSION TANK
8. LEVEL SWITCHES SUPPLIED AND MOUNTED BY PPPC ON THE EXPANSION TANK TO BE WIRED TO THE ENGINE DC JUNCTION BOX BY SHIPYARD. REFERENCE DRAWING #05-6176206-E1
9. COOLANT CONDITIONER MUST BE INSTALLED PRIOR TO OPERATION AND IS NOT INCLUDED IN PPPC SCOPE.

# CHARGE AIR COOLING CIRCUIT LEFT HAND ENGINE VIEW



REFERENCE DRAWING 8-6176206-G1 SHEET 2 OF 4

SHIPYARD SUPPLY

## SHIPYARD INSTALLATION DATA

### CHARGE AIR COOLING CIRCUIT

COOLANT CAPACITY (ENGINE ONLY): 2 GALLONS (CHARGE CIRCUIT ONLY)  
COOLANT CAPACITY (RADIATOR, CORE AND TANK): 8.7 GALLON  
FLOW RATE: 46 GPM  
MIN FLOW RATE: 41.4 GPM  
MAX EXTERNAL RESISTANCE IN ENGINE CIRCUIT: 4.4 PSI  
WATER FLOW RESISTANCE OF RADIATOR CORE IS 2.01 PSI  
MAXIMUM RESISTANCE FOR BALANCE OF PIPING IS 2.4 PSI  
MAXIMUM STATIC PRESSURE ON RADIATOR CORE (AIR SIDE) 0.5 IN H2O  
ENGINE INLET SIZE: 2.5" (SHIPYARD TO SUPPLY FLEXIBLE CONNECTION)  
ENGINE OUTLET SIZE: 2.5" (SHIPYARD TO SUPPLY FLEXIBLE CONNECTION)  
RADIATOR INLET CONNECTION: 3" 150# ASA FLANGE  
RADIATOR OUTLET CONNECTION: 3" 150# ASA FLANGE  
HEAT REJECTION TO COOLANT: 4,850 BTU/MIN  
MAX COOLANT INLET TEMPERATURE: 115 F  
MINIMUM TEMPERATURE OF 100 F  
VENT LINE 1/4" DIAMETER MUST BE SLOPED UPWARD FROM ENGINE TO EXPANSION TANK WITH NO DIPS OR LOOPS TO ENTRAP AIR

INDICATES SHIPYARD PIPING

				DRAWING: COOLING SYSTEM DIAGRAM - EMERGENCY			
7215 SOUTH 228TH STREET, KENT, WA 98037 PH. (253) 854-0505 * FAX (253) 850-2631				PROJECT: WASHINGTON STATE FERRIES 144 CAR FERRY			
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED				DATE	SHEET 1 OF 1	SCALE: NONE	
B 5/9/06	RAB	DESIGNED	RAB	10-13-05	DRAWING NO.		REV.
A 2/23/06	RAB	CHECKED	KJC	10-13-05	8-6176206-S3		B
REV	DATE	CHECKED					